UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,446	03/04/2002	Shunichi Sekiguchi	2565-0244P	4677

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EXAMINER
LE, VU

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 March 2002</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is

    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>19-30</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>19-30</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>04 March 2002</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☒ Certified copies of the priority documents have been received in Application No. <u>09/180,188</u>.

    3.☒ Copies of the certified copies of the priority documents have been received in this National Stage

       application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date <u>12-6-03</u>.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   The abstract of the disclosure is objected to because it is too long. Correction is

required. See MPEP § 608.01(b). It is important that the abstract not exceed 250

words in length since the space provided for the abstract on the computer tape used by

the printer is limited.

2.   Claims 1-18 have been canceled as instructed in Preliminary Amendment filed

March 4, 2002.

Drawings

3.   Figures 42-52 should be designated by a legend such as --Prior Art-- because

only that which is old is illustrated. See MPEP § 608.02(g).

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in: (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent; or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, *except* that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English.

5.   Claims 19-21, 23-26, 28-30 are rejected under 35 U.S.C. 102(e) as being

anticipated by Nakaya et al, US 5,963,259.

    Re claim 19, Nakaya et al discloses a video decoder for decoding an encoded

bitstream of video data (col. 18, line 64 to col. 19, line 16, fig. 1B, fig. 14 shows

schematic of video decoder 2 communicating with video coder 1, fig. 1B illustrates in

details an example of a video decoder with motion compensation i.e. synthesis circuit 4-2, note: motion compensation as disclosed in Nakaya involves both the synthesis circuit and the motion estimation unit, and they apply to both video coder 1 and video decoder 2), comprising:

a motion compensation unit (fig. 1B: 4-2 or fig. 5: 401, 4-1 or fig. 10: 909, 4-1, note: in Nakaya et al, motion compensation is the combination of motion estimation and synthesis circuit) for calculating a position for a sample image portion with a motion vector in the bitstream (col. 9, line 37 to col. 10, line 55, note: the sample image portion is "R"), and rounding the calculated position with a rounding information (col. 10, lines 47-55, col. 11, lines 1-21, col. 14, lines 4-23, col. 15, lines 1-11, note: Nakaya et al discusses "4-2" as the synthesis circuit for the decoder 2), the rounding information indicating accuracy for rounding and being decoded from the bitstream (col. 14, lines 16-24, note: rounding information d1 and d2 indicate accuracy of rounding); and

an image reconstruction unit for reconstructing a decoded image portion of the video data from the sample image portion (fig. 1B, synthesis circuit 4-2 reconstructs decoded image "P" from sample image portion "R").

Re claim 20, the video decoder according to claim 19, wherein the motion compensation unit employs plural motion vectors to transform a reference portion into a transformed image portion as the reference image portion, the reference image portion being decoded from the encoded bitstream (fig. 12, col. 13, line 27 to col. 14, line 67).

Re claim 21, the video decoder according to claim 20, wherein the motion compensation unit magnifies the reference image portion based on the motion parameters to produce the sample image portion (see fig. 12, col. 14, lines 25-67).

23. The video decoder according to claim 19, wherein the rounding information indicates one of half-pel precision and quarter-pel precision (col. 14, lines 4-23, note: the rounding information 1/d1 and 1/d2, wherein d1 and d2 are positive integers, indicates that half-pel and quarter-pel precision are included).

24. The video decoder according to claim 19, wherein the encoded bitstream is formatted by MPEG video format (col. 3, lines 58-64, note: Nakaya discloses a modified motion compensation technique that conforms to MPEG video format).

"Means or Step Plus Function" Claims

Examiner hereby invokes 35 USC 112, ¶6 for claims 25-30.

Re claim 25, Nakaya et al discloses a video decoding method for decoding a bitstream of video data (col. 18, line 64 to col. 19, line 16, fig. 1B, fig. 14 shows schematic of video decoder 2 communicating with video coder 1, fig. 1B illustrates in details an example of a video decoder with motion compensation i.e. synthesis circuit 4-2, note: motion compensation as disclosed in Nakaya involves both the synthesis circuit and the motion estimation unit, and they apply to both video coder 1 and video decoder 2), comprising:

a step for calculating a sample position on a reference image portion with a motion vector, the motion vector being comprised in the bitstream (fig. 1B: 4-2 or fig. 5: 401, 4-1 or fig. 10: 909, 4-1, note: in Nakaya et al, motion compensation is the

combination of motion estimation and synthesis circuit, col. 9, line 37 to col. 10, line 55, note: the sample of reference image portion is "R");

a step for rounding the calculated position according to rounding information, the rounding information being extracted from the bitstream (col. 10, lines 47-55, col. 11, lines 1-21, col. 14, lines 4-23, col. 15, lines 1-11, note: Nakaya et al discusses "4-2" as the synthesis circuit for the decoder 2, col. 14, lines 16-24, note: rounding information d1 and d2 indicate accuracy of rounding);

a step for producing a decoded image from the reference image portion indicated by the calculated position rounded by the step for rounding (fig. 1B, synthesis circuit 4-2 reconstructs decoded image "P" from reference image portion "R" based on rounding information).

Re claim 26, the video decoding method according to claim 25, wherein the step for calculating employs plural motion vectors. (The claim has been analyzed and rejected w/r to claim 20 above).

Re claim 28, the video decoding method according to claim 25, wherein the step for calculating calculates the sample position for each pel so that the calculated sample positions are magnified with respect to portions of pels in the decoded image. (The claim has been analyzed and rejected w/r to claim 21 above).

Re claim 29, the video decoding method according to claim 25, wherein the rounding information indicates either a half-pel precision or a quarter-pel precision. (The claim has been analyzed and rejected w/r to claim 23 above).

Re claim 30, the video decoding method according to claim 25, wherein the bit

stream is formatted as MPEG. (The claim has been analyzed and rejected w/r to claim

24 above).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 22, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Nakaya et al as applied to claims 19-20 and 25-25 respectively above, and further in

view of Ota et al, US 6,236,682.

Re claims 22 & 27, Nakaya et al fails to disclose the motion compensation unit

rotates the reference image portion based on the motion parameters to produce the

sample image portion, and the step for calculating calculates the sample position for

each pel so that the calculated sample positions are rotated with respected to positions

of pels in the decoded image as claimed.

Ota et al makes it well known of motion compensation which carries out the step

for calculating the sample position of the reference image for each pel so that the

calculated sample positions are rotated with respected to positions of pels in the

decoded image. In other words, motion compensation that rotates the reference image

portion based on the motion parameters to produce the sample image portion. (fig. 1:

112,114, col. 6, lines 1-54).

Therefore, taking the combined teaching of Nakaya et al and Ota et al as a whole, it would have been obvious to implement motion compensation that takes into account rotation movement of an image for the benefit of more accurate motion prediction when an image includes both linear and rotational motions (see Ota et al, col. 2, lines 25-40, lines 62-65, col. 3, lines 19-26).

Contact

8.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Le whose telephone number is 703-308-6613. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 703-305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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